



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,048	06/22/2006	Christophe Gueret	PET-2255	6852

7590 10/10/2008  
Millen White Zelano & Branigan  
Arlington Courthouse Plaza 1  
2200 Clarendon Blvd  
Suite 1400  
Arlington, VA 22201

EXAMINER
----------

NGUYEN, HUY TRAM

ART UNIT	PAPER NUMBER
----------	--------------

1797

MAIL DATE	DELIVERY MODE
-----------	---------------

10/10/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/584,048	<b>Applicant(s)</b> GUERET ET AL.	
	<b>Examiner</b> HUY-TRAM NGUYEN	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/22/06</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 8-9, 11, 14, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by **Cody et al. (US 2002/0153281 A1)**.

Regarding Claim 1, Cody et al. reference discloses a process for the treatment of a hydrocarbon charge, at least 80% of the compounds of which have a boiling point which is above or equal to 340°C (**Figure 2, numeral 8 and Page 2, Paragraph [0029] – crude oil - boiling point is inherency**), in which process:

a) the charge is sent to a fractionation stage (**Figure 2, numeral 10**) during which the recovery takes place of:

- at least one heavy fraction comprising at least 90% by weight of compounds which boil at above 450°C and at below 700°C (**Figure 2, numeral 16 – heavy distillate and Page 4, Paragraph [0054] – distillate cuts range from about 200°C to about 650°C**),

- and at least one light fraction which boils at less than the heavy fraction(s) (**Figure 2, numeral 12 – light distillate**),

- a residuum which boils at more than the heavy fraction(s) (**Figure 2, numeral 22**),

b) at least part of the heavy fraction is sent to an extraction stage during which at least some of the resins contained in said heavy fraction are extracted, and a purified fraction is recovered **(Figure 2, numerals 34 and 40),**

c) a mixture is made which comprises at least part of the purified fraction obtained in the extraction stage and at least one light fraction obtained in the fractionation stage **(Figure 2, 18 into extraction stage and 34 coming out of extraction stage),** and

d) the mixture thus obtained is sent to a cracking stage **(Figure 2, numeral 42 – hydroconversion unit).**

Regarding Claim 8, Cody et al. reference discloses the process according to claim 1, in which the cracking stage is hydrocracking **(Figure 2, numeral 42 - hydrocracking).**

Regarding Claim 9, Cody et al. reference discloses the process according to Claim 8, in which a residuum fraction obtained from the hydrocracking stage is sent, at least in part, to a dewaxing and hydrofinishing section for making oil bases **(Figure 2, numerals 60 – hydrofinishing and 74 – dewaxing).**

Regarding Claim 11, Cody et al. reference discloses the process according to claim 8, in which a residuum fraction is obtained from the hydrocracking stage, and is recycled, at least in part, to the hydrocracking stage **(Figure 2, numeral 52).**

Regarding Claim 14, Cody et al. reference discloses the process according to claim 1, in which the charge is selected from a direct distillation residuum, a residuum from a conversion process, a coking residuum, a residuum from a hydroconversion

Art Unit: 1797

process in fixed bed, a residuum from a conversion process in boiling bed, or a mixture of any one of these **(Page 2, Paragraph [0030])**.

Regarding Claim 15, Cody et al. reference discloses the process according to claim 1, in which an external charge is added to the heavy fraction entering the extraction stage, said charge being a vacuum distillate or an aromatic extract **(2, numeral 14 – medium distillate or 28 – other refinery stream)**.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

Art Unit: 1797

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-9, 11, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over **R.H. Kozlowski et al. (US Patent No. 3,256,175) in view of Cody et al. (US 2002/0153281 A1)**.

Regarding Claim 1, R.H. Kozlowski et al. reference discloses a process for the treatment of a hydrocarbon charge, at least 80% of the compounds of which have a boiling point which is above or equal to 340°C (**column 1, Lines 18-23– crude oil – boiling point is inherency**), in which process:

a) the charge is sent to a fractionation stage (**Figure, numerals 10 and 11 – distillation zone and Column 3, Line 75-Column 4, Line 1**) during which the recovery takes place of:

- at least one heavy fraction comprising at least 90% by weight of compounds which boil at above 450°C and at below 700°C (**Figure, numeral 13 and Column 4, Lines 2-4 and Tables 1 & 2 for boiling ranges**),

- and at least one light fraction which boils at less than the heavy fraction(s) (**Figure, numeral 12 and Column 4, Line 2**),

- a residuum which boils at more than the heavy fraction(s) (**Figure, numeral 15 and Column 4, Lines 6-7**),

b) at least part of the heavy fraction is sent to an extraction stage during which at least some of the resins contained in said heavy fraction are extracted (**Figure, numeral 20**), and a purified fraction is recovered (**Figure, numeral 21 – raffinate**).

However, R.H. Kozlowski et al. does not disclose steps c) and d). Cody et al. reference discloses a similar process for treating a hydrocarbon charge of heavy crude oil in which the heavy distillate being introduced into a solvent extractor and step of having a mixture comprising part of the purified fraction and a light fraction (**Figure 2, 18 into extraction stage and 34 coming out of extraction stage**) and step of sending the mixture to a cracking stage (**Figure 2, numeral 42 – hydroconversion unit**). It would have been obvious to one having ordinary skill in the art at the time the invention was made to operate the process of R.H. Kozlowski et al. with the process steps c) and d) as taught by Cody et al., since Cody et al. reference states at Page 1, Paragraph [0002] that such a modification would produce lubricating oil basestocks having a high saturates content, high viscosity indices and low volatilities.

Regarding Claim 2, R.H. Kozlowski et al. and Cody et al. references disclose the process according to Claim 1 except for the content of resins in the 340°C-700°C fraction of the charge being between 3 and 15% by weight. It would have been obvious to one having ordinary skill in the art at the time the invention was made to operate with the claimed weight percentage of the charge, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding Claim 3, R.H. Kozlowski et al. and Cody et al. references disclose the process according to claim 1 except for the heavy fraction resulting from the first fractionation stage comprising a resin content of more than 5% by weight. It would have been obvious to one having ordinary skill in the art at the time the invention was made to operate the fractionation stage to produce the claimed weight percentage of a resin in heavy fraction, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding Claim 4, R.H. Kozlowski et al. and Cody et al. references disclose the process according to claim 1 except for at least 20% by weight of the resins contained in the heavy fraction being extracted. It would have been obvious to one having ordinary skill in the art at the time the invention was made to operate the solvent extract step to produce the claimed weight percentage of the resins in heavy fraction, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding Claim 5, R.H. Kozlowski et al. and Cody et al. references disclose the process according to claim 1, in which the extraction of the resins of the heavy fraction makes it possible to obtain a purified fraction with a content of polyaromatic compounds comprising up to 5 cycles of less than 2% by weight (**R.H. Kozlowski - Column 3, Lines 65-67 – less than 10 %**).



Regarding Claim 6, R.H. Kozlowski et al. and Cody et al. references disclose the process according to claim 1, in which the extraction of the resins of the heavy fraction makes it possible to obtain a purified fraction, the nitrogen content of which is reduced by at least 20% by weight in relation to the heavy fraction which was introduced in the extraction stage **(R.H. Kozlowski - Column 3, Lines 41-48)**.

Regarding Claim 7, R.H. Kozlowski et al. and Cody et al. references disclose the process according to claim 1 including the propane as solvent extraction **(Cody et al. – Page 4, Paragraph [0046])**, solvent to oil ratio, temperature and pressure **(Cody et al. – Page 3, Paragraph [0037])**.

However, both R.H. Kozlowski et al. and Cody et al. do not disclose the theoretical stages of extraction zone of between 2 and 5. It would have been obvious to one having ordinary skill in the art at the time the invention was made to operate the process of R.H. Kozlowski in view of Cody et al. with the claimed theoretical stages, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding Claim 8, R.H. Kozlowski et al. and Cody et al. references disclose the process according to claim 1, in which the cracking stage is hydrocracking **(Cody et al. – Figure 2, numeral 42 - hydrocracking)**.

Regarding Claim 9, R.H. Kozlowski et al. and Cody et al. references disclose the process according to Claim 8, in which a residuum fraction obtained from the hydrocracking stage is sent, at least in part, to a dewaxing and hydrofinishing section for

making oil bases (**Cody et al. – Figure 2, numerals 60 – hydrofinishing and 74 – dewaxing**).

Regarding Claim 11, R.H. Kozlowski et al. and Cody et al. references disclose the process according to claim 8, in which a residuum fraction is obtained from the hydrocracking stage, and is recycled, at least in part, to the hydrocracking stage (**Cody et al. – Figure 2, numeral 52**).

Regarding Claim 14, R.H. Kozlowski et al. and Cody et al. references disclose the process according to claim 1, in which the charge is selected from a direct distillation residuum, a residuum from a conversion process, a coking residuum, a residuum from a hydroconversion process in fixed bed, a residuum from a conversion process in boiling bed, or a mixture of any one of these (**R.H. Kozlowski - Column 3, Line 75- Column 4, Line 1 – an atmospheric residuum or a vacuum distillate**).

Regarding Claim 15, R.H. Kozlowski et al. and Cody et al. references disclose the process according to claim 1, in which an external charge is added to the heavy fraction entering the extraction stage, said charge being a vacuum distillate or an aromatic extract (**Cody et al. – Figure 2, numeral 14 – medium distillate or 28 – other refinery stream**).

5. Claim 10, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **R.H. Kozlowski et al. (US Patent No. 3,256,175) in view of Cody et al. (US 2002/0153281 A1) and Van Klinken et al. (US Patent No. 4,039,429)**.

Regarding Claim 10, R.H. Kozlowski et al. and Cody et al. references disclose the process according to claim 1 except for a residuum fraction is obtained from the

Art Unit: 1797

hydrocracking stage and is sent, at least in part, to an FCC unit. It would have been obvious to one having ordinary skill in the art at the time the invention was made to operate the process of R.H. Kozlowski et al. with the step of sending the residuum fraction from the hydrocracking stage to a FCC unit since it was known in the art to use a FCC process to convert the residual hydrocarbon stock into light distillate (**Van**

**Klinken et al. - Abstract)**

Regarding Claim 12, R.H. Kozlowski et al. and Cody et al. references disclose the process according to claim 1 except for the cracking stage is catalytic cracking in fluidised bed (FCC). It would have been obvious to one having ordinary skill in the art at the time the invention was made to operate the process of R.H. Kozlowski et al. with the FCC step since it was known in the art to use a FCC process to convert the residual hydrocarbon stock into light distillate (**Van Klinken et al. - Abstract)**

Regarding Claim 13, R.H. Kozlowski et al., Cody et al. and Van Klinken et al. references discloses the process according to Claim 12, in which the FCC stage is preceded by a hydrotreatment stage (**Van Klinken et al. – Column 2, Lines 19-22**). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a hydrotreating stage prior to the FCC stage as taught by Van Klinken et al., since Van Klinken et al. states at Column 1, Lines 62-67 that such a modification would produce an excellent result.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUY-TRAM NGUYEN whose telephone number is

Art Unit: 1797

(571)270-3167. The examiner can normally be reached on MON- THURS: 6:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HTN  
9/7/08

/Walter D. Griffin/  
Supervisory Patent Examiner, Art Unit 1797